

REMARKS

Claims 1-8 and 10-19 were pending in the subject application, with claim 9 having previously been canceled without prejudice or disclaimer. By this Amendment, claims 6 and 7 have been amended to move a feature formerly recited in claim 7 into claim 6. Accordingly, claims 1-8 and 10-19 are presented for reconsideration, with claims 1 and 6 being in independent form.

Rejection Under 35 U.S.C. §102(b)

On page 2 of the February 6, 2006 Office Action, claims 1-4, 13, and 16 were rejected under 35 U.S.C. §102(b) as purportedly anticipated by U.S. Patent No. 4,837,478 to Anzai et al.

Regarding claim 1, the Examiner stated that Anzai discloses a metal vapor discharge lamp including: refractory and light-transmitting hermetic vessel (column 3, lines 35-38); a pair of electrode (Fig. 1, item 2) fixed to the hermetic vessel; a discharge sealed in the hermetic vessel, the discharge medium containing a halide (column 6, lines 22-30), a rare gas substantially disusing mercury (Fig. 1, item 3); and most of light irradiated from the metal vapor discharge lamp having near-infrared wavelengths (750-1100nm) (column 3, lines 48-54).

Regarding claim 2, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 1, wherein the halide contains a halide of at least one of potassium (K), cesium (Cs), and rubidium (Rb) which radiate light of near-infrared wavelengths (750-1100 nm) (column 6, lines 48-54).

Regarding claim 3, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 1, further including a visible-light blocking filter (Fig. 4, item 5).

Regarding claim 4, the Examiner stated that Anzai discloses the

metal vapor discharge lamp according to claim 1, wherein a wattage rating of the metal vapor discharge lamp is 100 W or less (Fig. 3 and column 5, lines 8-12).

Regarding claim 13, the Examiner stated that Anzai discloses a projector including: a reflector (Fig. 5, item 10); a metal vapor discharge lamp (Fig. 5, item 1) as specified any one of claims 1 to 12, the metal vapor discharge lamp being provided on the reflector; and a light control member (Fig. 5, item 8) covering a front surface of the reflector.

Regarding claim 16, the Examiner stated that Anzai discloses the projector according to claim 13, further including a visible-light blocking filter (Fig. 5, item 8) provided on at least one of front and rear surfaces of the light control member.

Applicant maintains that Anzai does not render the pending claims unpatentable since Anzai does not disclose or suggest the claimed invention.

Anzai, as understood by Applicant, is directed to a near-infrared ray radiation illuminator.

The Office Action suggest that claim 1 of the present application is disclosed by a combination of the distinct embodiments shown in Figs. 1 and 4, respectively, of Anzai.

Fig. 1 of Anzai shows a fluorescent-type low pressure rare gas electric discharge lamp. The discharge lamp shown in Fig. 1 of Anzai does not use a discharge medium containing a halide, since the lamp is of a fluorescent type.

On the other hand, Fig. 4 of Anzai shows a metal halide lamp constituting an embodiment distinct from the fluorescent-type

discharge lamp shown in Fig. 1 of Anzai. Anzai, column 6, lines 22-30, is a discussion regarding the light-emitting metal halide lamp of Fig. 4 which has a different construction than the fluorescent-type lamp of Fig. 1 of Anzai. For example, an outer tube 5 is provided in the metal halide lamp of Fig. 4 of Anzai to protect supporting frame 6 and leads 7 in the light emitting tube, from air and especially oxygen. Moreover, outer tube 5, is made of filter glass to remove visible light emission from the light emitting tube.

Thus, Fig. 4 shows a construction that is specific to a metal-halide lamp while Fig. 1 shows a different construction that is specific to the fluorescent-type lamp.

In addition, mercury is used in the metal halide lamp of Fig. 4 of Anzai, and mercury is not used in the fluorescent-type lamp of Fig. 1. Therefore, it is difficult (and Anzai does not provide practical suggestion) to combine the two mutually exclusive lamps.

Applicant submits that Anzai simply does not disclose or suggest a metal vapor discharge lamp comprising a refractory and light-transmitting hermetic vessel, a pair of electrode fixed to said hermetic vessel, a discharge medium sealed in the hermetic vessel, wherein the discharge medium contains a halide, a rare gas and substantially disusing mercury, and most of light irradiated from the metal vapor discharge lamp has near-infrared wavelengths (750 - 1100 nm), as provided by the claimed invention of claim 1 of the present application.

Regarding claims 2-4, 13, and 16, Applicant respectfully points out that claims 2-4, 13, and 16 depend on and include all the limitations of claim 1. Thus, claims 2-4, 13, and 16 are patentable at least for the reasons set forth above with respect

to claim 1.

Accordingly, Applicant respectfully submits that the pending claims of the present application are patentable over Anzai, and requests that the Examiner reconsider and withdraw the rejection of claims 1-4, 13, and 16 under 35 U.S.C. § 102(b).

Rejection Under 35 U.S.C. §103(a)

On page 4 of the February 6, 2006 Office Action, claims 5-8, 10-12, 14-15, and 17-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,837,478 to Anzai et al.

Regarding claim 5, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 1, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm (column 7, lines 13-22).

Regarding claim 6, the Examiner stated that Anzai discloses a metal vapor discharge lamp including: a refractory and light-transmitting hermetic vessel (column 3, lines 35-38); a pair of electrode (Fig. 1, item 2) fixed to the hermetic vessel; a discharge medium sealed the hermetic vessel containing first halide and a rare gas (Fig. 1, item 3), the first halide containing a halide of at least one of sodium (Na), scandium (Sc), and a rare earth metal which radiate visible light (380-780 nm); a visible light (380-780nm)/ a visible-light blocking filter (Fig. 4, item 5).

It is acknowledged in the Office Action that Anzai does not disclose that a ratio of visible-radiation power (380-780nm) to near-infrared radiation power (750-1100nm) falling within a range the visible-radiation power and the infrared power being output when metal vapor discharge lamp is in an ON state.

The Examiner stated that Anzai discloses that a first halide can contain either sodium or scandium and a rare earth metal though. The Examiner further stated that since these times have been disclosed, they would exhibit the properties, which radiate visible light.

The Examiner stated that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the ratio between visible-radiation power and near-infrared power in order for the lamp to provide mostly near-infrared radiation as opposed to visible radiation power.

Regarding claim 7, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 6, wherein the discharge medium includes: a second halide (column 6, lines 22-30) which generates a relatively high vapor pressure and being a halide of at least one metal which emits a visible light less than that emitted by the metal of the halide; a third halide (column 6, lines 22-30) containing a halide of at least one metal which radiates near-infrared light; and the discharge medium substantially disusing mercury.

Regarding claim 8, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 6, wherein the discharge medium contains a halide of at least one of potassium (K), cesium (Cs), and rubidium (Rb) which radiate light of near-infrared wavelengths (750-1100 nm) (column 6, lines 22-30).

Regarding claim 10, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 6, wherein a wattage rating of the metal vapor discharge lamp is 100 W or less (Fig. 3 and column 5, lines 8-12).

Regarding claim 11, the Examiner stated that Anzai discloses the

metal vapor discharge lamp according to claim 6, but does not expressly disclose a distance between the pair of electrodes falls within a range of 1mm 6mm by Applicant. The Examiner further states that Anzaionly discloses the length of tube (column 3, lines 22-24) and that it would have been obvious to one having ordinary skill in the art at the time of invention to have the distance between the pair of electrodes between 1 and 6mm, since discovering optimum or workable ranges involves only routine skill in the art.

Regarding claim 12, the Examiner stated that Anzai discloses the metal vapor discharge lamp according to claim 6, wherein the rare gas is Xe, Xe of five atoms or more being sealed in the hermetic vessel (column 4, lines 57-61).

Regarding claim 14, the Examiner stated that Anzai discloses the projector according to claim 13, but does not expressly disclose that the projector is installed in a vehicle and used as a headlamp. Regarding claim 14, the Examiner also states that it would have been obvious to one having ordinary skill in the art at the time of invention was made to have the projector installed in a vehicle to use as a headlamp since it is known in the art that discharge lamps are commonly used in headlamps.

Regarding claim 15, the Examiner stated that Anzai discloses the projector according to claim 14, further including visible-light blocking means (Fig. 4, item 5) for blocking visible light and passing near-infrared light there through in a high beam mode, and means for removing the visible-light blocking means from a radiation direction of the metal vapor discharge lamp in a low beam mode.

Regarding claim 17, the Examiner stated that Anzai discloses the projector according to claim 16, but does not expressly disclose

that the projector is installed in a vehicle and used as a headlamp. It would have been obvious to one having ordinary skill in the art at the time of invention was made to have the projector installed in a vehicle to use as a headlamp since it is known in the art that discharge lamps are commonly used in headlamps.

Regarding claim 18, the Examiner stated that Anzai discloses the projector according to claim 17, wherein the visible-light blocking filter blocks visible light and passes near-infrared light there through in a high beam mode (Fig. 27, 86a), and further comprising means for removing the visible-light blocking filter from a radiation direction of the metal vapor discharge lamp in a low beam mode (FIG. 27, 86b).

Regarding claim 19, the Examiner stated that Anzai discloses a metal vapor discharge lamp lighting device (Fig. 6, 5) including: a metal vapor discharge lamp as specified in any of claims 1 to 12; and a lighting circuit which supplies a current three times or more a rated lamp current after the metal vapor discharge lamp is lit, and reduces the current with a lapse of time (column 17, lines 65-67 thru column 18, lines 1-7).

Regarding claim 5, Applicant respectfully points out that claim 5 depends on and includes all the features of claim 1, and as discussed above, Anzai does disclose or suggest a metal vapor discharge lamp comprising a refractory and light-transmitting hermetic vessel, a pair of electrode fixed to said hermetic vessel, a discharge medium sealed in the hermetic vessel, wherein the discharge medium contains a halide, a rare gas and substantially disusing mercury, and most of light irradiated from the metal vapor discharge lamp has near-infrared wavelengths (750 - 1100 nm), as provided by the claimed invention of claim 1 of the present application.

Regarding claim 6, the Office Action apparently relies on a combination of the fluorescent-type lamp of Fig. 1 of Anzai and the metal halide lamp of Fig. 4 of Anzai.

As discussed above, the fluorescent-type lamp of Fig. 1 of Anzai and the metal halide lamp of Fig. 4 of Anzai are two distinct lamps of respective different constructions which are not amenable to be combined easily. Neither the fluorescent-type lamp of Fig. 1 of Anzai nor the metal halide lamp of Fig. 4 of Anzai discloses or suggests the metal vapor discharge lamp of claim 6 of the present application. For example, the lamp of Fig. 4 of Anzai uses mercury and the metal vapor discharge lamp of claim 6 of the present application does not use mercury.

In addition, Anzai does not disclose or suggest a metal vapor discharge lamp, wherein a visible-radiation power (380 - 780 nm) and a near-infrared radiation power (750 - 1100nm) output when the metal vapor discharge lamp is in an ON state have a ratio falling within a range of 0.5 : 1 to 4.0 : 1.

Applicant submits that Anzai simply does disclose or suggest a metal vapor discharge lamp comprising a refractory and light-transmitting hermetic vessel, a pair of electrode fixed to said hermetic vessel, a discharge medium sealed in the hermetic vessel, a visible-light blocking filter, wherein the discharge medium contains a first halide and a rare gas, the first halide contains a halide of at least one of sodium (Na), scandium (Sc) and a rare earth metal which radiate visible light (380 - 780 nm), and a visible-radiation power (380 - 780 nm) and a near-infrared radiation power (750 - 1100nm) output when the metal vapor discharge lamp is in an ON state have a ratio falling within a range of 0.5 : 1 to 4.0 : 1, as provided by the claimed invention of claim 1 of the present application.

Regarding claims 7, 8, 10-12, 14-15, and 17-19, Applicant respectfully points out that claims 7, 8, 10-12, 14-15, and 17-19 depend on and include all the limitations of claim 6. Thus, claims 7, 8, 10-12, 14-15, and 17-19 are patentable at least for the reasons set forth above with respect to claim 6.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 5-8, 10-12, 14-15, and 17-19 under 35 U.S.C. § 103.

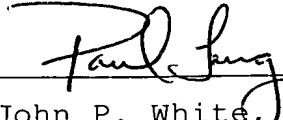
In view of the amendments to the claims and remarks hereinabove, Applicant maintains that claims 1-8 and 10-19 are now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a telephone interview would be of assistance in advancing prosecution of the subject application, Applicant's undersigned attorneys invite the Examiner to telephone them at the telephone number provided below.

If a petition for a further extension of time is required to make this response timely, this paper should be considered to be such a petition.

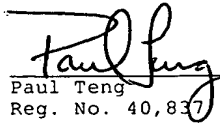
No fee, is deemed necessary in connection with the filing of this Amendment. However, if any additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



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May 4, 2006
Date